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"avex" follows "Sony" to launch  
Network Music Distribution System to Create the  
Exciting Music Life into the New Century

This will absolutely change the way we listen to, buy, and select the music.

Digital data format became more common for the music software, and the way we enjoy the music is changing radically now. In the past, when the medium of the music changed from phonograph record to CD (compact disc), the quality of the sound and handiness greatly improved. Now in the year 2000, which is often referred to as "Genesis of music distribution system", the music distribution system will set a totally new standard for selecting, buying, listening, compiling and storing the music. This article will introduce the existing sites and services, and provide a glimpse of music life in the 21<sup>st</sup> century when the products and services we have been dreamed of will be a part of our ordinary life.

Music distribution website

Contents server

Cellular phone service companies  
Platform

Download compressed music data

Copy tunes from CD

Select music data in CD-ROM drive

Compress the data by encoder

Store the music data in HDD

Decompress the data by decoder

Enjoy music

Export the data via port

(reader / writer)

Record the data into media

Decompress the data by decoder

Enjoy music

Portable player

Record the data in the media

Decompress the data by decoder

Enjoy music

Cellular phone

Put media into player

Flow chart for music distribution and memory audio usage

Sampling and downloading available at your PC

Quick and easy to transfer the downloaded tunes to memory audio

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Music download service via Internet will go into full swing

“avex” covers almost all the tunes, while SME covers old tunes as well.

The tunes of mega-hit artists like Namie Amuro and Ayumi Hamasaki, who always make million-seller CD's, are available on the Internet.

“avex” will start paid music download service at @MUSIC from April 25, 2000. Initially, about 100 tunes will be distributed from the single CD's released in the last few months. Thereafter, almost all the new-release singles of the Japanese pop music will be available for downloading on the very day of its release. The price will be ¥350 a piece. “Even overseas pop music will be available depending on the item. We expect that at least the tunes produced by “avex” will be distributed”, said Hiroko Mugibayashi, Contents Manager at “avex” Network aggressively.

Sony Music Entertainment (SME) was the first among the major record companies to start the music distribution service via Internet. Their distribution site “bitmusic” opened toward the end of 1999, and took off well. “It sells 200 to 300 tunes a day, the demand will expand as the increased number of tunes become available”, says Jun Kanemaru, Producer, SME bitmusic Promotion Division. He points out that the more the artist's package sells, the more his or her tunes are downloaded. SME will start distributing oldies, like those of Seiko Matsuda and Saori Minami in May, 2000.

MUSIC.CO.JP, the established firm in the music distribution business welcomes record

companies to join their business. "Our MP3 paid distribution site called MP3.MUSIC.CO.JP, which is in operation since September 1999, is selling well since the beginning of 2000, stimulated by the opening of bitmusic" according to Takao Nagano, Planning General Manager at Digital Distribution Division. They seem to be thriving, making Exclusive Distribution Agreement with Alfa Music. MUSIC. CO. JP is planning to be more than just a distributor at MP3.MUSIC.CO.JP. They want to play the part as a wholesaler in the future, offering complied tunes to other's sites, distributing music to cellular phones, and supplying music for the distribution to multimedia terminals at convenience stores.

At present, we have to visit various sites to buy tunes of several artists, although all you have to do is to input the applicable URL. For instance, you have to visit bitmusic to buy the tunes of Tamio Okuda and PUFFY, and visit @MUSIC for the tunes of ELT, and then go to MP3.MUSIC.CO.JP for the tunes of Happy End. It would be handy if the tunes from various record companies can be downloaded at the single site when the music distribution business goes into full swing.

eS! MUSIC to be opened in June 2000 by eS Music is intended to be the portal site of the music. The distribution service provided by eS! Music will be in compliance with DAWN 2001, the copyright control plan for the digital music domain initiated by Japanese Society for Rights of Authors, Composers and Publishers (JASRAC). Names of the artists, number of tunes distributed, and other details have not been uncovered yet. But, "Big names that will surely surprise you will join the eS! MUSIC.", affirmed Minoru Mukaidani, Executive Vice President, Member of the Board at eS Music, and also the keyboard player at the band called "Cassiopeia". eS! Music evoked a controversy when it announced to sell music at "¥100 per piece", less than the half of bitmusic's price. Mr. Mukaidani says "We can still stay profitable with ¥100 per piece, but the selling price is always determined by the supplier of the music." It has not been determined if they really sell music at ¥100 a piece.

Living in the age of computer network, record companies cannot cling to the traditional package business. Music distribution firms are anxiously gathering the tunes they can distribute. "Some artists are willing to take part in the network music distribution, and some are not." according to "avex." If the affiliated record company is not running music distribution business, the artists may do it by themselves, or provide their music to the distributor. Now that "avex," a newcomer, followed the major record company, SME, and extensively entered into the network music distribution business, other record companies are compelled to follow suit, no matter how they feel about it.

NTT Communications starts trial operations of the joint music distribution project on April 19, 2000. Nine (9) record companies including NIPPON CROWN have announced their participation in this project, and a several more will join before it takes off. In the paid trial operations, four (4) different distribution systems will be available, Windows Media Technologies (WMT), Liquid Audio, Solid Audio, and MuSIC, and users can select one of them at their discretion.

No standard has been established yet for downloading the music. The download process, as well as the compatible computer software and portable player vary depending on the distribution

system or compression types. The charts in the following page summarize the process of purchasing and playing the music downloaded from the network. Three (3) typical music distribution sites were picked up as an example.

Music Distribution Sites for Sampling and Purchasing Music

Site name	Compression type	Distribution system	Music player (software)	Compatible portable audio player	Price	General description, Major distribution items, etc.
bitmusic <a href="http://bit.sonymusic.co.jp/">http://bit.sonymusic.co.jp/</a>	ATRAC3	EMMS Windows Media Technologies	bitmusic Player TypeE bitmusic Player TypeW	SONY: Memory stick walkman SHARP: e-musee	¥350 per piece	New releases, and some oldies of SME / Antinos Records artists; Motoharu Sano, Tamio Okuda, and others
@MUSIC <a href="http://atmusic.avexnet.or.jp/">http://atmusic.avexnet.or.jp/</a>	ATRAC3 AAC	EMMS Liquid Audio	@MUSIC Player (subject to change) Liquid Player	2 players above, and SANYO:SSAP TOSHIBA: Mobile Audio Player	¥350 per piece	Almost all new releases of "avex" artists; Namie Amuro, Ayumi Hamasaki, ELT, globe, and others
MP3.MUSIC.CO.JP <a href="http://mp3.music.co.jp/">http://mp3.music.co.jp/</a>	MP3	...	Real Player, Liquid Player, Windows Media Player (WMP), etc.	4 players above, and TOSHIBA: diGO, Diamond Multi-Media Systems: Rio500, etc.	¥100 – ¥400 per piece	Groups like Tulip, Happy-End, Yukadan Mostly ¥200 or ¥250 per piece. ¥400 for medleys
BaySide <a href="http://www.bayside.ne.jp/">http://www.bayside.ne.jp/</a>	TwinVQ	SolidAudio	(incompatible with home PC)	TOSHIBA: diGO, Hitachi Maxell: musicBit!, FUJIFILM AXIA: AS2000, etc.	Free / ¥100 – per piece	Mostly of independent labels covering wide variety of music; Rock'n Roll, pops, jazz, and classical music. Some are free of charge.
Musicite <a href="http://musicite.mbn.or.jp/">http://musicite.mbn.or.jp/</a>	AAC	Liquid Audio	Liquid Player	SANYO: SSAP, TOSHIBA: Mobile Audio Player	Free	Exclusive for Dream Net members. Select the tunes via the i-Mode cellular phone, and download them to home PC.
eS! Music <a href="http://www.esmusic.co.jp">http://www.esmusic.co.jp</a>	(To be determined)	...	...	...	¥100 – per piece	To start-up in June. Mainly of the big name artists. Comply with JASRAC DAWN2001.
Arcstar Music <a href="http://www.arcstarmusic.com/">http://www.arcstarmusic.com/</a>	WMA, AAC, TwinVQ	WMT, Liquid Audio, Solid Audio, MuSIC	WMP, Liquid Player, etc.	SANYO: SSAP, TOSHIBA: Mobile Audio Player, diGO, Hitachi Maxell: musicBit!	(Details not determined yet)	Trial operations from April 19 through July 31, 2000. 9 record companies will join the operations and 4 of them will provide paid download service.

MOTHER OF MUSIC <a href="http://www.j.mom.com">http://www.j.mom.com</a>	(To be determined)	...	...	...	---	Mainly streaming. MBB project by BMG Fanhouse, Impress, and others.
mp3.com <a href="http://www.mp3.com/">http://www.mp3.com/</a>	MP3	...	MP3-compatible players like Real Player, Liquid Player, WMP	MP3-compatible players like SANYO: SSAP, TOSHIBA: Mobile Audio Player, diGO	Free (picked up from the album)	Covers wide range of artists. Sampling is provided for all tunes. Distributes certain part of the album for free. Can purchase by CD.
Musicmaker.com <a href="http://www.musicmaker.com">http://www.musicmaker.com</a>	WMA, MP3, AAC	WMT, Liquid Audio	WMP, Liquid Player, MP3-compatible player	MP3-compatible players like SANYO: SSAP, TOSHIBA: Mobile Audio Player, diGO	Free / \$0.99 per piece	Can buy tunes of big names like Jimmy Page, and XTC. Also sells custom-made CD's.

“avex” launches network music distribution  
@MUSIC will take off soon

@ MUSIC      “avex” network

As it starts up on April 25, 2000, @ MUSIC is planning to distribute about 100 recently released tunes of Ayumi Hamasaki, Namie Amuro, globe, Nanase Aikawa, DA PUMP, Every Little Thing, TRF, dream, and other artists affiliated to “avex.” After that, all the newly released single tunes will be available for downloading at @ MUSIC concurrently with the package release. You can choose either EMMS or Liquid Audio as distribution system. Contents of the site, and player display (EMMS player display is shown) as shown on the right are subject to change at the start-up of the download service.

URL: <http://atmusic.avexnet.or.jp/>

Number of tunes distributed at start-up	About 100 tunes by about 30 artists
Price	¥350 per piece
Compression type, distribution system	ATRAC3 / EMMS, AAC / LiquidAudio

“BEAUTIFUL NOISE” (¥39,800) : SmartMedia containing tunes in MP3 format comes with the music player. It was produced by Tomoyasu Hotei, and offered for limited sale.

DIGITAL MUSIC: SUMMARY OF DISTRIBUTION SITES  
AND THE MUSIC YOU CAN BUY THERE, NOW!!

bitmusic                      run by Sony Music Entertainment

Distributing over 100 newly released tunes of the popular artists of SME and Antinos Records.

URL: <http://bit.sonymusic.co.jp/>

Number of tunes distributed as of end March, 2000	116 tunes by 99 artists
Price	¥350 per piece
Compression type, distribution system	ATRAC3 / EMMS, Windows Media Technologies

MP3.MUSIC.CO.JP                      run by Music.co.jp

The site features extensive oldies collection of Japanese pop music such as Rock’n Roll and “folk songs”. Special value of this site is that even the tunes of discontinued package are available.

URL: <http://mp3.music.co.jp/>

Number of tunes distributed as of end March, 2000	About 3,000 tunes by about 500 artists
Price	¥100 to ¥400 (medley) per piece
Compression type, distribution system	MP3 / ...

BaySide run by NTT Software

This is to distribute the music for Solid Audio Player only.

URL: <http://www.bayside.ne.jp/>

Number of tunes distributed as of end March, 2000	About 1,070 tunes
Price	Free / ¥100 at the lowest per piece
Compression type, distribution system	TwinVQ / SolidAudio

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DIGITAL MUSIC: YOU CAN BUY A PIECE OF MUSIC THROUGH HOME PC  
AND ENJOY IT ON THE SPOT

How to buy music at bitmusic:

First, you have to choose the distribution system, then download and install the music player (software) compatible with the distribution system. Once tunes are downloaded via selected distribution system, they cannot be converted to other system. It is also recommended to review the specifications and handiness very carefully when you choose the music player.

Select the desired artist from the top page

Find the name of your desired artist, or title of the newly-released tunes from the list compiled in the order of the Japanese syllabary. Then the selected artist's page is displayed. Click the purchasing icon that corresponds to the distribution system you have installed.

Free trial version

Free distribution menu is provided on the top page. In this menu, the music plays shorter (runs about 1 min. 40 sec. only) and only the limited numbers of tunes are available. But some are distributed in advance of the package release.

Sampling

Sampling requires Windows Media Player. Sampling version runs for 30 seconds.

## Purchase

### Download with Player Type E

1. Enter user's e-mail address
2. Specify the payment method
- 3 to 4. Settle the payment  
Confirm the purchase specifications
5. Download the music file.

You can choose either the credit card or the electrical payment. "Smash" provided by So-net, or the prepaid card, "WebMoney", can be used for the electrical payment. Advanced registration or purchase is required to choose the electrical payment. Once you confirm the purchase specifications and settle the payment, the player starts up to initiate downloading.

### Download with Player Type W

1. Download the music file.
2. Enter user's e-mail address
3. Select the payment method
- 4 to 5. Settle the payment  
Confirm the purchase specifications
6. Get the music key.

Payment procedure is identical with the Player Type E as shown on the left, but process flow is different. With Player Type W, you have to download the music first, settle the payment, and finally download the key necessary to play the tune. Initial downloading is free of charge, but the tunes cannot be played without the key.

## Play the tune by home PC

The feature of Player Type E is that the list of tune titles and the display of CD jacket appear on your display as the disc plays. Program mode is available by which the user can edit the tunes and the playing order. The player provides the links to the sites containing the information related to the applicable artist.

Player Type W display looks like common PC screen with "OPEN" button to search and open the file of tunes in the PC, folder reference, and trash box. Shuffle, and repeated play functions are common to both types.

Only the Windows users connected to the Internet in Japan can download and purchase the tunes. Mac users can do sampling if they are equipped with Windows Media Player  $\beta$ . Currently you can choose from two distribution systems, Electronic Media Management System (EMMS) by IBM and Windows Media Technologies (WMT) by Microsoft. Two types of players are provided, corresponding to each distribution system. Currently, the Type E for IBM distribution system seems to be easier to handle. The Type E has many functions that are not available with the Type W, such as programmed play, display of album jacket picture, and linkage to the relevant sites for the artist. Possibly the bitmusic may become compatible with @MUSIC by "avex." If it does, the utility will be expanded further. One small inconvenience is that sampling requires Windows Media Player, which can be downloaded from Microsoft website for free. You can go to the Microsoft website from the online help at bitmusic. If you enjoy sampling a lot, Type W might be preferable for no need of download as well as for effective use of HDD as it is combined with Windows Media Player.

Music player on PC	Dedicated Type W (Windows Media Player), and Type E (EMMS)
Sound quality of distributed tunes	Sampling rate: 44.1kHz, Bit rate: 132kbps
Payment method	Credit cards offered by 3 credit companies, Smash, WebMoney

#### How to buy music at MP3.MUSIC.CO.JP:

Find the name of desired artist from the index by the initial letter of the alphabetical notation, or from the artist list which is displayed by clicking "All Artists". The album list for each record label can be displayed by Label Index. You cannot search by artist's name, title of the tune, or music category.

Select the tune

Select the album from the album list to display the song list. Press "Sample" button for sampling, and "Buy" button for purchasing the tune.

Purchase

Sampling

Sampling requires Real Player. Shown here is the latest version; Real Player 7 Basic (Japanese version) (<http://www.jp.real.com/player/index.html>). It is a freeware. "Purchasing procedure" and "Buy" buttons are shown with the album jacket picture. Press "Buy" button if you are purchasing the tune.

### Specify the payment method

Member registration is required for credit card payment, and electrical payments such as C-CHECK, Acosis, and QQQ. The inclusive payment to Internet providers, @nifty, or SANNET, as well as Smash service can be used by entering the ID and the password. In that case, the member registration at MUSIC.CO.JP is not necessary.

### Download the tune

Once authorized by the specified payment method, purchase specifications are displayed. Check the data, and press "Buy" button. Download screen is displayed. Click "Start Download" button.

### Play the tune with home PC

The music file purchased at MP3.MUSIC.CO.JP is an ordinary MP3 file distinguished by digital watermark. Therefore, you can use any of the MP3-compatible players. Select the downloaded tune, or drag and drop the downloaded file onto the player. Shown left above is the Real Player 7 screen, which is also used for sampling. Shown left is the Liquid Player 5.0 screen (<http://www.LiquidAudio.co.jp/>), and shown above is the Quick Time 4 screen (<http://www.apple.co.jp/quicktime>). You may use other preferred players such as Windows Media Player, JealJukebox, popular MP3 player, WinAMP, Sonique, etc.

Member registration is made online, and user ID and password are issued on site. Take note that the member registration is dependent on the payment method. If you register for credit card payment, you cannot use electric payment, for example, C-CHECK. In the case of the credit card payment, card number is required only at the registration. You can purchase the tune with user ID and password from the second time onward. If you register for the electric payment, you can choose C-CHECK, Acosis, or QQQ at the time of purchase. Members of @nifty and SANNET can pay for the download music inclusively with the charges to the providers. No special software is required to purchase the tunes. At present, you may simply download the tunes from the browser, but Windows Media will be introduced as the distribution system in the near future. It does not mean that all the tunes that were distributed by MP3 will be switched to the Windows Media format. Some tunes will be distributed by MP3, while the others will be distributed by the Windows Media style. Tune suppliers will select MP3 or Windows Media.

Music player on PC	Real Player 7, Liquid Player, QuickTime Player, Winamp, etc.
Sound quality of distributed tunes	Sampling rate: 44.1kHz, Bit rate: 128kbps
Payment method	Credit cards offered by 8 credit companies, Smash, C-CHECK, Acosis, QQQ, payment through provider

### How to buy music at BaySide:

SmartMedia with ID, and its compatible drive system are required, since the purchased music file is not stored in the PC hard disc, but is directly transferred and stored in the memory card. Shown here is the recording unit, RW300, dedicated to the Solid Audio Player diGO by TOSHIBA.

#### Select the tune

It is capable of searching tunes by artist's name or music category.

#### Sampling

Sampling data is a VQF file that runs for about 30 seconds, and is to be played by TwinVQ or SoundVQ player.

#### Required preparation before purchase

1. Member registration
2. Download music distribution helper application
3. Select the payment method

Member registration is required before downloading the tune. Serial number is issued via e-mail as you finish temporary on-line registration. Then, download the helper application for music distribution, and install it in the PC. Access to the registration page, and enter the issued serial number to get authorized as a registered member. When everything is ready, click the "download" button. For paid distribution, another screen appears for selecting payment method. You can choose credit card or C-CHECK.

#### Purchase

##### Download the tune

The helper application that you have previously installed starts up automatically. Click "Buy" button to initiate downloading.

Settle the payment and confirm the purchase specifications.

Settle the payment on the browser. Wait for a moment.

Browser starts up automatically as the download is completed, and a screen appears to settle the payment. Confirm the title of the tune and the price, and click "OK" button. Another screen appears to enter your member ID and the password. A different screen appears depending on the selected payment method, credit card or C-CHECK.

Key is issued

The helper application solves cryptography of the tune you have downloaded, and store it in the SmartMedia with ID.

It is not for playing on the PC

Open the removable disc (SmartMedia), and you will find the SVQ file.

SolidAudio system is the combination of InfoBind and TwinVQ. InfoBind is a copyright protection technique utilizing the particular ID of the memory card. TwinVQ is a technique to compress the music data. This is a network audio system in which the downloaded SVQ file is recorded directly into the memory card and played by the portable player compatible with SolidAudio. It is not designed for playing on the PC's. Sampling data is a TwinVQ file without InfoBind, which can be played by TwinVQ Player (for Windows only) or SoundVQ player compatible with TwinVQ (for Windows and Mac).

BaySide involves rather complicated procedure before the purchase. You have to go through the installation of music distribution helper application, preliminary member registration, obtaining serial number via e-mail, registration again to be an authorized member. But it is easy after these procedures, since the helper application starts-up and operates automatically. There are Windows version and Mac version for helper application.

Music player on PC	---
Sound quality of distributed tunes	Sampling rate: 44.1kHz, Bit rate: 80kbps
Payment method	Credit cards offered by 3 credit companies, C-CHECK

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DIGITAL MUSIC: IS MD OBSOLETE!?

Model/Manufacturer	memory stick walkman (NW-MS7) / SONY
Current market price / Recommended retail price	¥37,800 / ¥45,000
Dimensions / Weight	H96.3 × W37 × D19.2mm / 69g
Recording media	MagicGate memory stick (64MB) packed together
Compatible compression method	ATRAC3

Recording time (bit rate)	60 min. (132kbps), 80 min. (105kbps), 120 min. (66kbps)
Connection to PC	USB
Applicable files on PC	ATRAC3, WAVE, MP3
OS	Windows
Max. time for continuous play	4 hours

Software may be placed in CD-ROM drive

Browser may be viewed via "OpenMG Jukebox" included in the package software. The bitmusicPlayer mentioned previously can be downloaded through this browser.

Installing the software

Utilizing file management software

Music files downloaded from the Internet, or tunes from CD are imported by the software, OpenMG Jukebox, which has functions for managing, editing, and playing various music files. Imported files are put into a folder created for each album. Order of the files can be rearranged freely by drag and drop using "Edit My Select" function.

Use downloaded music files

Music files downloaded by the Player Type W are transferred by "Internet File Import" command in the Jukebox "File" menu. Those downloaded by the Player Type E are transferred by "To Portable Equipment" button on the player.

Use other types of file

WAVE or MP3 format files are transferred by selecting "File Import" command in Jukebox "File" menu. As "File Importer" starts up, select the applicable file format, and specify the folder containing the applicable file.

Connect the walkman to the PC by USB

Attach the supplied connection adapter and USB cable to the memory stick walkman, and then connect the cable to the USB terminal on the PC.

Transfer the music data from HDD to the walkman.

Portable Player screen appears in the Jukebox as the walkman is connected to the PC. Specify the tunes you want to transfer to the walkman, and click the RightArrow key between the Jukebox and Portable Player screen. Then, press Check OUT "START" button.

#### Copying tunes from CD

##### Insert CD into the CD-ROM drive

You can set by the Jukebox Operation menu to "Start-up OpenMG CD Recorder whenever CD is inserted". When song titles in the CD are displayed, select the tune you want to copy and press the record button.

Click "Recorder" on the Jukebox screen

If Recorder does not start-up as CD is inserted, select "CD recording" in "File" menu, or click "Recorder" on the Jukebox screen.

Click "Internet" on the Jukebox screen, and you will be connected to OpenMG information site. Then go to the music distribution site to download the tunes.

When used as a player, you can input the song title, name of the artist, and the music category. You may edit the tunes to divide or connect them. Moreover, you can use the filter mode by clicking "Filter", in which tunes can be searched by various parameters.

There is a limit for the tunes in the PC to be transferred to the walkman. The limit varies by the individual tune, but basically transfer from the CD is up to 3 times, and only once for the tunes purchased via bitmusic. However, it can be transferred to the walkman again if the tune has been transferred back to the PC.

Conversion time from CD to ATRAC 3	1 min. 20 sec.
Time required for transferring data to memory stick walkman	23 sec.

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Model/Manufacturer	Rio 500 / Diamond Multimedia Systems
Current market price / Recommended retail price	¥28,800 / Open price
Dimensions / Weight	W63 × H91 × D19mm / 78g
Recording media	Built-in 64MB flash memory, SmartMedia
Compatible compression method	MP3
Recording time (64KB)	66 min. (128kbps), 91 min. (96kbps), 132 min. (64kbps)

Connection to PC	USB
Applicable files on PC	MP3, WMA, AIFF, QuickTime, WAVE
OS	Windows, Macintosh
Max. time for continuous play	Approx. 13 hours

Install the software

Connect Rio 500

Install Rio software in the PC, and connect Rio to the USB port on the PC. Turn on the power of Rio, and the driver is loaded to the system.

Read the data con

Use downloaded music files

Select the downloaded tune by the supplied file management software "RioPort Audio Manager" ("RioPort SoundJamMP" for Mac), and click "Add the item" command. The selected tune will be added to the list of transferring tunes.

Click "Copy to portable player" command to initiate the transfer. Songs can be copied as they are, or you may select one of the 4 bit rates: 128kbps, 112kbps, 96kbps, or 64kbps.

Use other types of file

RioPort Audio Manager is compatible with Windows Media Audio, automatically converting the file to MP3 to be playable on Rio before the transfer.

Looking into the memory of Rio, you will see all the files in MP3 format. On the screen shown above, the three MP3 files from the top of the list are those purchased from MP3.MUSIC.CO.JP, and the file at the bottom is the one converted to MP3 from WMA format.

Copying tunes from CD

Click "Copy from CD", and the software detects audio CD in the CD-ROM drive. A title list of the tunes in the CD appears on the screen. Click "Start recording" to simultaneously initiate ripping and compression into MP3.

RioPort Audio Manager searches and lists the music data contained in the hard disc, when you select "Search tunes in the hard disc" command in the "File" menu. It is very convenient that the users do not have to register each tune after the downloading. Audio Manager has a browser function. Click "rioport.com" and you can go to RioPort site to download the tune while maintaining the Audio Manager window on the screen. SounJam MP for Mac does not have these functions.

Conversion time from CD to MP3	1 min. 33 sec.
Time required for transferring data to Rio500	7 sec.

Model/Manufacturer	diGO (MM300) / TOSHIBA
Current market price / Recommended retail price	¥29,800 (direct sale via Internet)
Dimensions / Weight	W54 × H86 × D10mm / 52g
Recording media	SmartMedia with ID (3 pieces of 8MB SmartMedia with tunes are supplied)
Compatible compression method	TwinVQ, MP3
Recording time (64MB)	100 min. (80kbps), 200 min. (40kbps), 400 min. (20kbps)
Connection to PC	USB (Dedicated data recording unit RW300)
Applicable files on PC	TwinVQ, MP3, WAVE, AIFF
OS	Windows, Macintosh
Max. time for continuous play	Approx. 9.5hours (in TwinVQ 11kHz long play mode)

NOTE) Bit rate for recording time is for the stereo mode.

Recording time for diGO is based on TwinVQ.

#### Install the software

The supplied software, SD ENCODER, can view the data contained in the SmartMedia. Shown here is the tune downloaded earlier in this article.

Take the SmartMedia out of the data recording unit, RW300, connected to the USB port, and insert it into the player for playing the tunes.

#### Use other types of file

SD ENCODER is compatible with MP3 and TwinVQ. "S" in the upper "Type" column stands for SVQ in SolidAudio format. "M" denotes MP3, and "T" denotes Twin VQ. The tunes selected in the upper table is also shown in the lower table by clicking downward arrow mark "↓". Then click "Copy" to start recording into SmartMedia in RW300.

## Copying tunes from CD

Insert an audio CD to the CD-ROM drive on the PC, and click "Audio CD". Select the file to be converted into SVQ and click "SVQ File". Conversion starts. Created SVQ file is stored in the hard disc. SVQ file cannot be created without putting a SmartMedia with ID in the data recording unit.

TwinVQ file can be created by the freeware called TwinVQ Encoder or SoundVQ Encoder (shown below right). But the software can just convert WAVE file to TwinVQ. It does not have a ripping function from CD's. Real Jukebox (shown below left) has functions for ripping and converting to the MP3 format. It provides very quick WAVE conversion and MP3 compression. Freeware version of Real Jukebox can make up to 96kbps MP3, while shareware version priced at \$29.95 can make 320kbps MP3.

diGO is compatible with TwinVQ and MP3, but SD ENCORDER can convert only from CD to SVQ, or from WAVE (AIFF for Mac) to SVQ. If you are planning to create a personal music data library on your home PC, conversion to MP3 or TwinVQ is recommended because they can be played on your PC using software other than SC ENCORDER. Twin VQ audio software, VQ AUDIO, by Hagiwara Sys-Com (¥5,800) provides very quick conversion to TwinVQ, and also can play SVQ created by SC ENCORDER on PC's.

Conversion time from CD to SVQ	6 min. 40 sec.
Time required for transferring data to diGO (SmartMedia in RW300)	10sec.

NOTE) On condition that a tune that runs 3 min. and 3 seconds was converted. The spec of the laptop used is Celeron333MHz and 64MB memory.

## Memory stick is used on SHARP player

### E-musee WA-HP1 / SHARP

This player is integrated with a headphone. Basic specifications are the same as the memory stick walkman by SONY, except for its configuration. The management software, Open MG Jukebox for SHARP, is supplied with the player. Replaceable lithium-ion battery is used.

- Recommended retail price: ¥48,000
- Weight: 149g (including battery and media)
- Media used: MagicGate memory stick (64MB supplied in package)
- Compression method: ATRAC3
- Recording time (bit rate): 60 min. (132kbps), 80 min. (105kbps), 120 min. (66kbps)
- Connection to PC: USB
- Applicable file on PC: ATRAC3, WAVE, MP3

- OS: Windows
- Max. time for continuous play: 4 hours
- Market introduction: March 29, 2000

SolidAudio player: you can wear it on the head or hang it down the neck

Exhibited for "Sample Only" by TOSHIBA was the headphone-type and pendant-type SolidAudio players. The headphone-type player has SmartMedia slot on the ear cover. The pendant-type player is compact, and you can wear it around the neck. This player is compatible with TwinVQ and MP3, as is the case with diGO. The timing of market introduction and selling price have not yet been uncovered. For detailed information, go "Sumame.com" (<http://www.sumame.com/>), the shopping site where you can buy goods for SmartMedia.